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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|--------------------------|------------------|
| 10/633,851 | 08/04/2003 | David J. Corisis | 2884.6US (96-0291.06/US) | 5688 |
| 24247 | 7590 | 06/18/2004 | EXAMINER | |
| TRASK BRITT P.O. BOX 2550 SALT LAKE CITY, UT 84110 | | | MAGEE, THOMAS J | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2811 | |

DATE MAILED: 06/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/633,851

Applicant(s)

CORISIS ET AL.

Examiner

Thomas J. Magee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on April 5, 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-10 and 12-15 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1,2,4-10 and 12-15 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections – 35 U.S.C. 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 5 – 10, and 12 – 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Kanemoto et al. (US 6,410,987 B1).

3. Regarding Claims 1 and 2, Kanemoto et al. disclose (Col. 13, lines 19 – 25) a lead frame with a plurality of lead frames for a semiconductor device, with a first surface having a bond pad (4) (Figure 31) and a bottom surface,

each lead frame located adjacent another lead frame with an opening therebetween, containing a plurality of lead fingers (7), each lead finger having an end and defining an opening for accommodating a semiconductor device therein, with the plurality of lead fingers located adjacent the sides of the semiconductor device (Figure 31) with at least one bus bar (81) having a portion extending along the end of at least one lead finger and along a portion of one side of a semiconductor device when located in said opening and

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sections of tape (114) (Figures 45 and 46) and (106) substantially rectangular in shape having an outer portion and an inner portion for attaching the first surface of the semiconductor device

(110) and a portion of two ends of lead fingers, the section of tape attached to at least a portion of one bus bar (lead 81). The figures do not explicitly disclose the tape mounting of the bus bar, but it is disclosed that the leads are secured with the tape (Col. 26, lines 44 – 50) and the bus bar is part of the lead structure. It is therefore inherent that the bus bar is partially attached with tape.

4. Regarding Claim 5, Kanemoto et al. disclose (Col. 13, lines 19 – 25) a lead frame of a plurality of lead frames for use with a semiconductor device having a periphery, the lead frame comprising:

a lead frame with another lead frame adjacent. The lead frame having an opening there between, having a plurality of inwardly extending leads (7) (Figure 31) toward the opening for the semiconductor device to be located therein, with at least one lead (14) having a portion extending along a length of the device periphery and extending between the device and another inwardly extending lead (81, left side) and a second inwardly extending lead extending along another length of the semiconductor device, wherein the leads, Vcc, (leads 95, top, and 39, bottom) (Figure 6) are power supply leads (Col. 10, lines 25 – 29).

5. Regarding Claim 6, Kanemoto et al. disclose (Table 1) that one of the inwardly extending leads, Vss, (lead 1) provides a ground.

6. Regarding Claim 7, Kanemoto et al. disclose (Table 1) that one of the inwardly extend-

ing leads, Vss, (lead 1) provides a reference voltage to the semiconductor device (Col. 10, lines 30 – 31).

7. Regarding Claims 8 – 10, Kanemoto et al. disclose (Figure 31) that that the at least one lead (81, left side) of the plurality of inwardly extending leads surrounds the device on two adjacent portions of the periphery of the device and the lead is bifurcated.

8. Regarding Claims 12 and 13, Kanemoto et al. disclose (Figure 31) that two of the inwardly extending leads (81, right and left sides) extend along the periphery of the device on opposite sides, wherein both of the leads substantially surround the device.

9. Regarding Claim 14, Kanemoto et al. disclose (Figure 31) that the two inwardly extending leads, (81, right and left sides) are bifurcated forming first and second line portions on both leads.

10. Regarding Claim 15, Kanemoto et al. disclose (Figure 31) that the first portion of the at least one bifurcated inwardly extending lead (81, left side) extends along a first portion of the periphery of the semiconductor device, and the second portion (81, right side) extends along a second portion of the periphery, while the first portion of the second bifurcated inwardly extending lead extends along a third portion of the periphery of the device, and the second portion of the second lead extends along a fourth portion of the device periphery.

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11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kanemoto et al., as applied to Claims 1, 2, 5 – 10, and 12 – 15, and further in view of Loder et al. (US 5,777, 345).

13. Regarding Claim 4, Kanemoto et al. disclose, as discussed for Claim 1, a lead frame among a plurality of lead frames, wherein there are at least two bus bars (81, right and left sides) extending along portions of two adjacent regions of the semiconductor device and along the ends of the lead fingers. Kanemoto et al. do not disclose the presence of a die paddle for supporting the semiconductor device. Loder et al. disclose the presence of a die paddle (16) (Figure 1) supporting the affixed semiconductor die (Col. 2, lines 15 –16). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Loder et al. with Kanemoto et al. to provide a rigidly supported die within the lead frame structure for increased strength and durability.

Response to Arguments

14. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

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Conclusions

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to **Thomas Magee**, whose telephone number is **(703) 305 5396**. The Examiner can normally be reached on Monday through Friday from 8:30AM to 5:00PM (EST). If attempts to reach the Examiner by telephone are unsuccessful, the examiner's supervisor, **Eddie Lee**, can be reached on **(703) 308-1690**. The fax number for the organization where this application or proceeding is assigned is **(703)**

872-9306.
Thomas Magee
June 4, 2004

Steven Loke
Primary Examiner

